

PROBOPYRINELLA HEARDI N. SP.
(ISOPODA: BOPYRIDAE) A BRANCHIAL
PARASITE OF THE HIPPOLYTID SHRIMP
Latreutes parvulus (DECAPODA: CARIDEA)

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Abstract.—The bopyrid isopod *Probopyrinella heardi* n. sp. occurs in the branchial chambers of the shrimp *Latreutes parvulus* in coastal waters off Georgia, Mississippi, and eastern Florida. *Probopyrinella heardi* can be distinguished from *P. latreuticola*, the only other described species in the genus, by the asymmetrical development of the posterior lamina and first oostegite of the female of *P. heardi*.

Chopra (1923) first recognized from published descriptions that *Bopyroides latreuticola* Gissler, 1882, represented a distinct genus, but he did not name the genus since specimens of *B. latreuticola* were unavailable for study. Based on the study of material, Nierstrasz and Brender à Brandis (1929) followed Chopra's suggestion and proposed the new genus *Probopyrinella* with *B. latreuticola* as the type and only species.

Markham (1977) reviewed the taxonomic history of *Bopyroides latreuticola* and also clarified the differences between *Probopyrinella* and the four genera (*Bopyrella* Bonnier, 1900; *Bopyrina* Kossmann, 1881; *Bopyroides* Stimpson, 1884; and *Pro-bopyrus* Giard and Bonnier, 1888) to which *P. latreuticola* had previously been assigned.

An amended generic diagnosis is presented for *Probopyrinella* based on study of *P. heardi*, *P. latreuticola* and previous generic diagnoses.

Probopyrinella Nierstrasz and Brender à Brandis, 1929

Generic diagnosis.—Female: Anterolateral edge of head acutely pointed on reduced side; frontal lamina only slightly developed; posterior ventral lamina, 1 pair of projections. Eyes present. Maxilliped with palp. Head fused with pereomere 1 in one species, other pereon segments distinct. Coxal plates and dorsal bosses absent. Lateral margin of expanded side of pereon distinct; margin on reduced side less distinct. Pereopods of reduced side visible in dorsal view. Oostegite 1, posterior plate more than half width of anterior plate; oostegite 5 on reduced side large, sickle-shaped; other oostegites small, only marginally enclosing brood chamber. Pleon of 6 segments, fused dorsally, well defined laterally by incisions only on expanded side. Pleopods 4 and 5 biramous pairs, except last pair either uniramous or biramous. Uropods absent.

Male: head slightly narrower than pereomere 1. Pereon with 7 distinct segments. Pleon, 6 segments at least laterally indicated. Pleopods, 5 uniramous pairs, reduced to low protuberances. Uropods absent.

Discussion.—The large fifth oostegite appears to be an important generic character (Heard, pers. comm.) that has not previously been recognized. If in further

study the enlarged fifth oostegite proves to be an important character, then many of the Bopyridae parasitic on caridean shrimps of the family Hippolytidae are more closely related than is now thought.

Probopyrinella heardi, new species

Figs. 1, 2

Bopyridae sp. A, Camp, Whiting and Martin. 1977:7, 27.

Material examined.—(All are paratypes except holotype.) All infesting *Latreutes parvulus*. Georgia: Pass Warsaw Sound, Cabbage Island, Chatham County; 81°55'N 31°55'W; 4–8 m; 30 Aug 1972; R. W. Heard collected and determined host; 1 ♀ (gravid, no male), USNM 172452 (holotype, host present). Same location; 4–8 m; 13 Oct 1972; R. W. Heard collected and determined host; 2 ♀, 2 ♂, USNM 172453 (host present).—Florida: East of Florida Power and Light electrical generating plant, Hutchison Island, St. Lucie County; Station 1, EJ-72-132; 27°21'06"N 80°13'08"W; 8.5 m; 5 Jul 1972; R. M. Gallagher, F. S. Kennedy collected; D. K. Camp determined host; 2 ♀, 2 ♂, FSBC I 20838 (host FSBC I 16102). Same location, EJ-72-190; 6.7 m; 2 Nov 1972; R. M. Gallagher, C. R. Futch, N. H. Whiting collected; D. K. Camp determined host; 1 ♀, 1 ♂, FSBC I 20839 (host FSBC I 16103). Marco Island, Collier County; Station 18, 2, 1 (station location not known; 81°42'N 25°56'W; Nov 1972; D. L. Adkison determined host; 2 ♀, 1 ♂, MNHN Ep. 112, 113; 2 ♀ (gravid), 1 ♂, ZMC. Near pass, Lemon Bay; 82°21'N 26°54'W; trawl; 29 Jan 1983; O. Hartman collected; L. B. Holthuis determined host; 1 ♀, 1 ♂, USNM 172416 (host present).—Alabama: Pass, west end of Dauphin Island, Mobile County; 30°14'N 88°23'W; A-frame dredge net; 4–7 m; 14 Feb 1977; R. W. Heard collected and determined host; 1 ♀ (no male), USNM 172454.—Mississippi: Approximately 19 km south of Mississippi River; approximately 29°11'N 88°37'W; trawl 22–26 m; 10 Oct 1977; collected by shrimper; D. L. Adkison determined host; 1 ♀, 1 ♂, USNM 172455 (host present).

Description.—Female (Figs. 1, 2a, b): Body asymmetrical, distortion angle 40–65°; length 1.7–2.0 mm; width across pereomere 3, 1.2–1.5 mm.

Head fused with first pereomere; anterolateral corner of head acute on reduced side, other side with corner broader. First antenna, 3 or 4 segments; basal segment, no setae; second segment, 2 apical setae; distal segment, 4 setae as terminal tuft. Second antenna, 2 segments; no setae; distal segment, 3 to 6 setae. Second antenna greater than $\frac{1}{2}$ length of first antenna. Maxilliped quadrate, anterior plate larger than posterior plate; small palp present. Posterior lamina, 1 pair of projections; projection on reduced side longer than that on expanded side.

Pereon segmentation often medially indistinct between pereomeres 2 and 3 (2 specimens). Lateral margins of pereomeres of expanded side well defined, notch often present in posterior $\frac{1}{3}$ of pereomeres 2 and 3. Lateral margin on reduced side curled dorsally creating shallow trough medial to margin and exposing pereopods to dorsal view. Dorsal bosses absent. Coxal plates absent (present only on pereomere 1 of expanded side in 2 specimens). Tergal area of pereomere 1 on reduced side with conical projection. Pereopods with basal carina; pereopods decreasing in size from pereopods 4 or 5; pereopods smaller on reduced side. First oostegite, posterior plate width nearly equal to width of anterior plate; internal

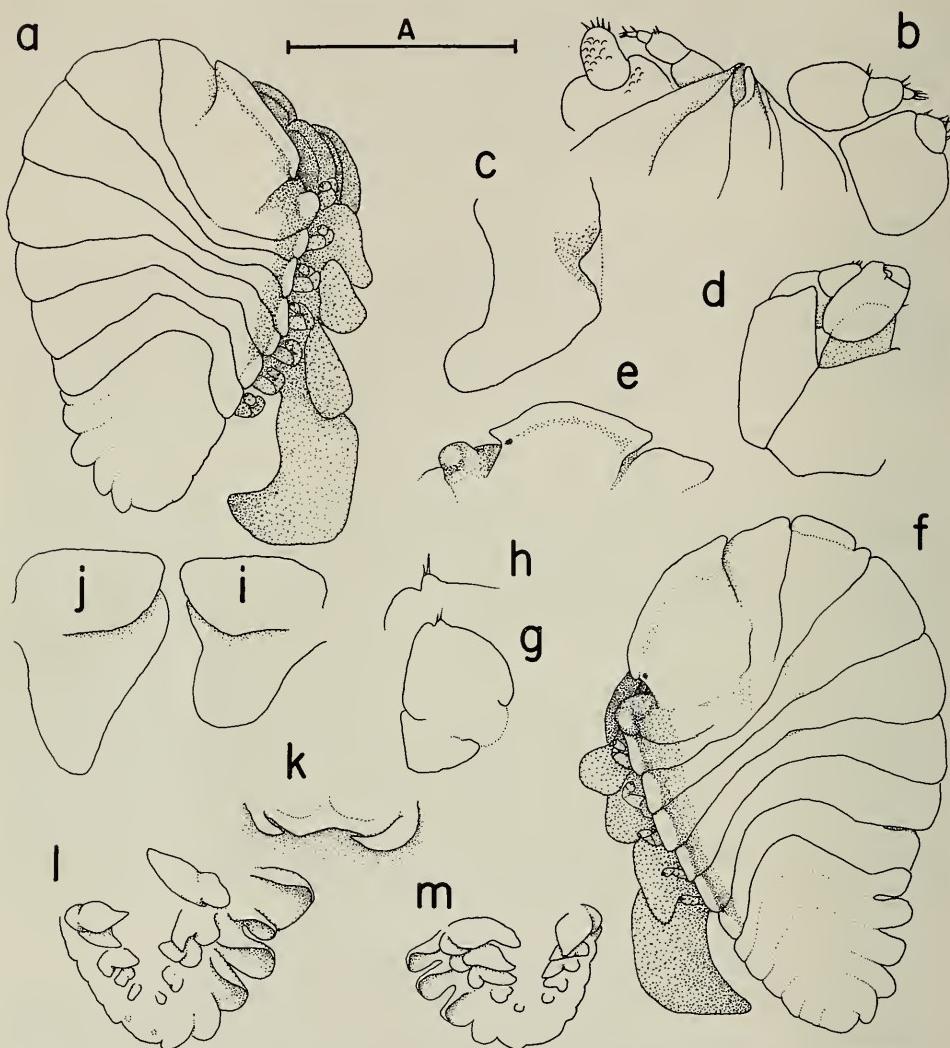


Fig. 1. *Probopyrinella heardi*, female: a, Dorsal view; b, Antennae and oral cone; c, Oostegite 5 from reduced side; d, Pereopod 4, expanded side; e, Head, viewed in dorsal plane of head; f, Holotype, dorsal view; g, Maxilliped; h, Maxilliped palp; i, Oostegite 1 from expanded side, internal view; j, Oostegite 1 from reduced side, internal view; k, Posterior lamina; l, Pleon of a, ventral view; m, Pleon of f, ventral view. Figures from holotype, e–k, m. Figures from paratype FSBC I-20839, a and l. Figures from USNM 172453, b–d. Scale: A = 1.0 mm (Figs. a, d, f, i, j, m).

ridge unornamented; first oostegites asymmetrically developed, oostegite on reduced side enlarged. Fifth oostegite on reduced side enlarged; other oostegites reduced, only fringing brood chamber.

Pleon deeply set in pereomere 7. Six segments laterally indicated. Segments 1–5 on expanded side defined by deep notch, anterior edge of segments curled ventrally. Pleomeres on reduced side and the sixth pleomere less clearly defined than on expanded side. Pleopods, 4 or 5 pairs, anterior pairs biramous, last pair

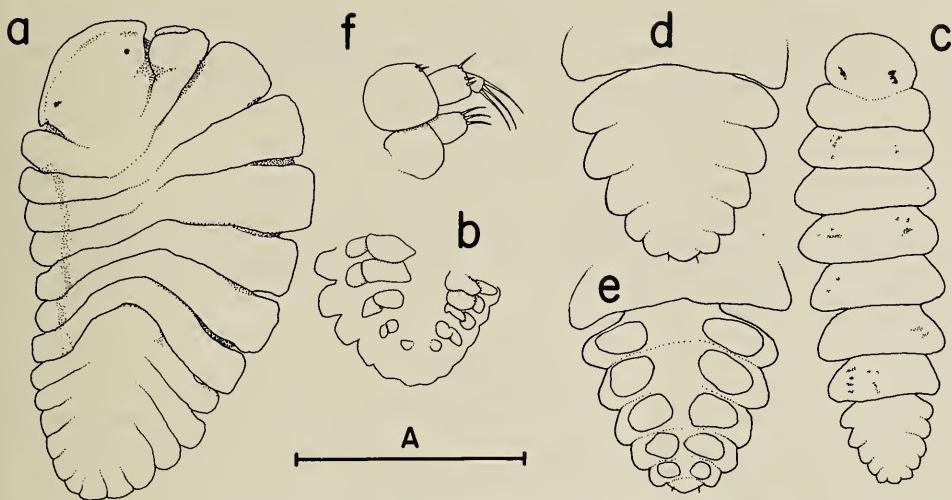


Fig. 2. *Probopyrinella heardi*, a, b, female, immature; c-f, male: a, Dorsal view; b, Pleon, ventral view; c, Dorsal view; d, Pleon, dorsal view; e, Pleon, ventral view; f, Antenna. Figures from USNM 172454, a and b. Figures from FSBC I-20838, c-f. Scale = 1.0 mm.

uniramous; pleopods decreasing in size posteriorly until posterior pair only small tubercle or ridge. Uropods absent.

Male (Fig. 2c-f): Length 0.7–1.1 mm; width across pereomere 3 or 4, 0.2–0.4 mm.

Head wider than long, distinct from first pereomere. Eyes present. First antenna, 3 segments; basal segment, 0 to 2 setae; second segment, 2–4 setae; distal segment, 3 to 5 setae. Second antenna, 2 segments; basal segment, 1 or 2 setae; distal segment, 2–4 setae. Second antenna $\frac{1}{2}$ to $\frac{2}{3}$ length of first antenna. Maxillipeds not seen.

Pereon 7 segments, increasing in width until pereomere 3 or 4, thereafter decreasing in width posteriorly; pigment spots on dorsal surface of most pereomeres. Pereopods decreasing in size both anteriorly and posteriorly from pereopod 4.

Pleon 6 segments indicated laterally by notches, medially fused; pleomere 1 subequal in width to pereomere 7. Pleopods, 5 uniramous pairs, decreasing in size posteriorly. Uropods absent.

Etymology.—This species is named for Richard W. Heard who collected many of the specimens and who first recognized this species as undescribed.

Type series.—The holotype and some paratypes have been deposited in the National Museum of Natural History, Smithsonian Institution (USNM). The remaining paratypes have been deposited in Florida Department of Natural Resources, St. Petersburg (FSBC); Muséum National d'Histoire Naturelle, Paris (MNHN); and Universitetets Zoologiske Museum, Copenhagen (UZM).

Type-locality.—Warsaw Sound (off Cabbage Island) Chatham County, Georgia, U.S.A.

Distribution.—*Probopyrinella heardi* is known from the coastal waters of the southeastern United States from Georgia to Mississippi.

Discussion.—While the two species of *Probopyrinella* are very similar in dorsal

view, *Probopyrinella heardi* can be distinguished from *P. latreuticola* by the following characters for the former: (1) female with head and first pereomere fused, (2) female with second antenna of 2 segments, (3) female with posterior lamina and first oostegite asymmetrically developed, (4) male with second antenna of two segments, and (5) male with segmentation of pleon less distinct.

Probopyrinella heardi, *P. latreuticola*, and the two undescribed species mentioned by Chopra (1923:537), all infest members of the hippolytid genus *Latreutes* Stimpson, 1860: *P. heardi* on *L. parvulus*, *P. latreuticola* on *L. fucorum* (Fabricius, 1798), and the undescribed species on *L. mucronatus* (Stimpson, 1860) and *L. pygneaus* Nobili, 1904.

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